Project Title KINGSTON ONTARIO
LASALLE CAUSEWAY BASCULE BRIDGE
COUNTERWEIGHT INTERIM REPAIR

Project Number R.108246.001

Project Date 2021-02-08

END OF SECTION

Consultant for General, Structural, Construction Specifications

END OF SECTION

SPECIFICATIONS

APPENDICES

BRIDGE DRAWINGS

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 32 16.19 Construction Progress Schedule – Bar (Gantt) Chart.

.2 Section 01 14 00 Work Restrictions.

.3 Section 01 55 26 Traffic Control.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract comprises the interim repair of the counterweight of the LaSalle Causeway Bascule Bridge located at Kingston, Ontario; and further identified as PSPC Project Number R.108246.001.

1.3 CONTRACT METHOD

.1 Construct Work under lump sum contract.

1.4 COST BREAKDOWN

.1 Within 48 hours of notification of acceptance of bid furnish a cost breakdown by Section aggregating Contract amount.

.2 Within 48 hours of acceptance of bid submit a list of subcontractors.

1.5 CONTRACTOR USE OF PREMISES

.1 Limit use of premises for storage, for Work, and for access, to allow:

.1 Departmental Representative occupancy.

.2 Public usage.

.2 Co-ordinate use of premises under direction of Departmental Representative.

.3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

.4 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.

.5 Repair or replace portions of existing work which have been altered or damaged during construction operations to match existing or adjoining work, as directed by Departmental Representative.

.6 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.6 DEPARTMENTAL REPRESENTATIVE OCCUPANCY

.1 Departmental Representative will occupy premises during entire construction period for execution of normal operations.

.2 Co-operate with Departmental Representative in scheduling operations to minimize conflict and to facilitate Departmental Representative usage.

1.7 ALTERATIONS TO EXISTING BRIDGE

.1 Execute work with least possible interference or disturbance to bridge operations, pedestrians, vehicles, and normal use of bridge. Arrange with Departmental Representative to facilitate execution of work.

1.8 SCHEDULING

.1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed and approved by the Departmental Representative take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.

.2 Submit construction sequencing with a detailed written plan of operations coincident with the project schedule and each subsequent schedule update to the Departmental Representative for review prior to implementation.

1.9 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy of each document as follows:

.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed Shop Drawings.
.5 List of Outstanding Shop Drawings.
.6 Change Orders.
.7 Other Modifications to Contract.
.8 Field Test Reports.
.9 Copy of Approved Work Schedule.
.10 Health and Safety Plan and Other Safety Related Documents.
.11 Other documents as specified.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 11 00 Summary of Work.

.2 Section 01 32 16.19 Construction Progress Schedule – Bar (Gantt) Chart.

.3 Section 01 55 26 Traffic Control.

1.2 WORKING HOURS

.1 Perform all the work in accordance with the PSPC LaSalle Causeway Road Closure Protocol in a series of single lane closures, full roadway closures, or as specified in the Traffic Control Plan.

.2 Contractor to coordinate work schedule with other contractors identified by PSPC who will be working on the bridge at any point between the start date and the end date of Work. Contractor shall not mobilize or perform Work while another contractor is mobilized or working on the bridge.

.3 Complete all the work within the roadway including traffic control setup and removal in accordance with the requirements and timing restrictions of Section 01 55 26.

.4 Work which does not interrupt traffic or pedestrian flow can occur outside the above restrictions.

.5 Provide Departmental Representative 3 working days notice prior to commencement or modification of the work schedule.

1.3 USE OF PREMISES

.1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.

.2 Maintain existing services to building and provide for personnel and vehicle access.

.3 Contractor to provide sanitary facilities for use by Contractor’s personnel. Keep facilities clean.

.4 Contractor shall limit use of premises for Work, for storage, and for access, to allow:

.1 Departmental Representative occupancy.

.2 Public usage.

.5 Co-ordinate use of premises under direction of Departmental Representative.

.6 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

.7 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.

.8 Repair or replace portions of existing work which have been altered or damaged during construction operations to match existing or adjoining work, as directed by Departmental representative, at no cost to PSPC or the Departmental Representative.

.9 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.4 SPECIAL REQUIREMENTS

.1 Carry out the Work between permitted lane closure periods.

.2 Submit schedule in accordance with Section 01 32 16.19 - Construction Progress Schedule - Bar (GANTT) Chart.

.3 Ensure Contractor’s personnel employed on site become familiar with and obey regulations including health and safety, fire, traffic and security regulations.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

.1 Contractor shall schedule, administer, and preside at project meetings. Contractor shall record and distribute meeting minutes.

.2 Contractor shall provide physical space for meetings when requested by the Departmental Representative.

.3 All relevant parties shall attend project meetings. 24 hours of notice shall be given to all relevant parties.

.4 Contractor shall prepare all documents requested by the Departmental Representative for requested meetings. This may include, but not limited to the following:

.1 Project Schedule (Gantt Chart) as per Section 01 32 16.19.

1.2 NOTIFICATIONS/REPORTS

.1 Throughout the course of Work immediately inform the Departmental Representative of any issues or concerns arising during the Work. The Contractor shall keep a journal of progress on site, including:

.1 Reports of all safety related issues and subsequent resolutions.

.2 Regular accounts of work progress.

.3 Field observations, problems, conflicts.

.4 Problems which impede construction schedule and site resolutions as agreed by the Departmental Representative

.5 Revisions to construction schedule.

.6 Maintenance of quality standards.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

.1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.

.2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally, Bar Chart should be derived from commercially available computerized project management system.

.3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.

.4 Construction Work Week: Contractor may work 7 days per week due to emergency nature of repair. Contractor to coordinate work schedule with the work of any other contractors on the bridge. Contractor to provide work schedule and outline work days/times as part of Bar (GANTT) Chart submission.

.5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.

.6 Master Plan: summary-level schedule that identifies major activities and key milestones.

.7 Milestone: significant event in project, usually completion of major deliverable.

.8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.

.9 Project Planning, Monitoring and Control System: overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

1.2 REQUIREMENTS

.1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.

.2 Plan to complete Work in accordance with prescribed milestones and time frame.

.3 Limit activity durations to maximum of approximately 5 working days, to allow for progress reporting.

.4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit to Departmental Representative within 5 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.

.3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

.4 Submit construction sequencing with a detailed written plan of operations coincident with the project schedule and each subsequent schedule update to the Departmental Representative for review prior to implementation.

1.4 PROJECT MILESTONES

.1 Project milestones form interim targets for Project Schedule.

.1 Project award.

.2 Obtain necessary permits.

.3 Contractor mobilization.

.4 Implement and maintain traffic control plan.

.5 Establish temporary staging area.

.6 Traffic and pedestrian control.

.7 Field verification of existing conditions.

.8 Fabrication and installation of new components.

.9 Commissioning of bridge.

.10 Removal of traffic and pedestrian detour.

.11 Demobilize.

1.5 MASTER PLAN

.1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).

.2 Departmental Representative will review and return revised schedules within 2 working days.

.3 Revise impractical schedule and resubmit within 2 working days.

.4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.6 PROJECT SCHEDULE

.1 Develop detailed Project Schedule derived from Master Plan.

.2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:

.1 Award.

.2 Shop Drawings, Samples.

.3 Approvals.

.4 Mobilization.

.5 Traffic and pedestrian control.

.6 Field verification of existing conditions.

.7 Fabrication and installation of new components.

.8 Commissioning of bridge.

.9 Removal of traffic and pedestrian detour.

.10 Demobilize.

.3 Project key dates:

.1 Start of Work: March 15th, 2021.

.2 Completion of Work: April 2nd, 2021.

1.7 PROJECT SCHEDULE REPORTING

.1 Update Project Schedule on weekly basis or as required, reflecting activity changes and completions, as well as activities in progress.

.2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.8 PROJECT MEETINGS

.1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

.2 Weather related delays with their remedial measures will be discussed and negotiated.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

.1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, and samples in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.

.10 Keep one reviewed copy of each submission on site.

.11 Submit number of hard copies specified for each type and format of submittal, and also submit in electronic format as pdf files. Forward pdf, NMSEdit Professional spp, MS Word, MS Excel, MS Project and Autocad dwg files as applicable for the documents being submitted on USB compatible with PSPC encryption requirements or through email or alternate electronic file sharing service such as ftp, as directed by Departmental Representative.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Ontario of Canada.

.3 Shop drawings shall be prepared using Computer Aided Drafting & Design (CADD) in accordance with the PSPC National CADD Standard (https://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html), and will be subject to the review

and approval of the Departmental Representative. Submit shop drawings in PDF and DWG format.

.4 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.5 Allow 2 working days for Departmental Representative's review of each submission.

.6 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

.7 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.

.8 Accompany submissions with transmittal letter, in duplicate, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor’s name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.9 Submissions include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor’s stamp, signed by Contractor’s authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.
  - .6 Standards.
  - .7 Operating weight.
  - .8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

.10 After Departmental Representative's review, distribute copies.

.11 Submit one electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.

.12 Submit one electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

.13 Submit one electronic copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 3 years of date of contract award for project.

.14 Submit one electronic copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.15 Submit one electronic copy of manufacturers' instructions for requirements requested in specification Sections and as requested by Departmental Representative.

.1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.

.16 Submit one electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.

.17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.18 Submit one electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.

.19 Delete information not applicable to project.

.20 Supplement standard information to provide details applicable to project.

.21 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, an electronic response will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.22 The review of shop drawings by the Departmental Representative is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that the Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Safety and Insurance Board Experience Report.

.2 Submit transcription of insurance immediately after award of Contract.

1.4 FEES, PERMITS AND CERTIFICATES

.1 Provide authorities having jurisdiction with information requested.

.2 Pay fees and obtain certificates and permits required.

.3 Furnish certificates and permits.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 35 29.06 Health and Safety Requirements.

1.2 REFERENCES

.1 CSA C22.1-12, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.

.2 CAN/CSA-C22.3 No.1-06, Overhead Systems.

.3 CSA C22.3 No.7-06, Underground Systems.

.4 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

1.3 DEFINITIONS

.1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.

.2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment has been isolated.

.3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).

.4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.

.5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.

.6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit copy of lockout procedures, sample of lockout permit and lockout tags proposed for use in accordance with Section 01 33 00. Submit within 14 calendar days of acceptance of bid.

1.5 COMPLIANCE REQUIREMENTS

.1 Comply with the following in regards to isolation and lockout of electrical facilities and equipment:

.1 Canadian Electrical Code.

.2 Federal and Provincial Occupational Health and Safety Acts and Regulations.

.3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.

.4 Procedures specified herein.

.2 In event of conflict between any provisions of above authorities the most stringent provision will apply.

1.6 ISOLATION OF EXISTING SERVICES

.1 Obtain Departmental Representative's written authorization prior to working on existing live or active electrical facilities and equipment and before proceeding with isolation of such item.

.2 To obtain authorization, submit to Departmental Representative the following documentation:

.1 Written request to isolate the particular service or facility and;

.2 Copy of Contractor's Lockout Procedures.

.3 Make a Request for Isolation for each event, unless directed otherwise by Departmental Representative, as follows:

.1 Fill-out standard form in current use at the Facility as provided by Departmental Representative or;

.2 Where no form exists, make written request indicating:

.1 The equipment, system or service to be isolated and its location;

.2 Duration of isolation period (i.e. start time & date and completion time & date).

.3 Voltage of service feed to system or equipment being isolated.

.4 Name of person making the request.

.4 Do not proceed with isolation until receipt of written notification from Departmental Representative granting the Isolation Request and authorization to proceed with the work.

.1 Note that Departmental Representative may designate another person at the Facility being authorized to grant the Isolation Request.

.5 Conduct safe, orderly shutdown of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.

.6 Determine in advance, as much as possible, in cooperation with the Departmental Representative, the type and frequency of situations which will require isolation of existing services.

.7 Plan and schedule shut down of existing services in consultation with the Departmental Representative.

.8 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 01 35 29.06.

1.7 LOCKOUTS

.1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from all potential sources of energy prior to working on such items.

.2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.

.3 Prepare written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workforce to safely isolate an active piece of equipment or electrical facility and effectively lockout and tagout it's sources of energy.

.4 Include as part of the Lockout Procedures a system of lockout permits managed by the Contractor's Superintendent or other qualified person designated by him/her as being "in-charge" at the site.

.1 A lockout permit is to be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.

.2 Duties of person managing the permit system to include:

.1 Issuance of permits and lockout tags to workers.

.2 Determining permit duration.

.3 Maintaining record of permits and tags issued.

.4 Making a Request for Isolation to Departmental Representative when required as specified above.

.5 Designating a Safety Watcher, when one is required based on type of work.

.6 Ensuring equipment or facility has been properly isolated.

.7 Collecting and safekeeping lockout tags returned by workers as a record of the event.

.5 Clearly establish, describe and allocate responsibilities of:

.1 Workers.

.2 Person managing the lockout permit system.

.3 Safety Watcher.

.4 Subcontractor(s) and General Contractor.

.6 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect specific project requirements.

.1 Incorporate site specific rules and procedures in force at site as provided by Facility Manager through the Departmental Representative.

.2 Clearly label the document as being the Lockout procedures applicable to work of this contract.

.7 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.

.8 Use industry standard lockout tags.

.9 Provide appropriate safety grounding and guards as required.

1.8 CONFORMANCE

.1 Brief all workers and subcontractors on requirements of this section. Stringently enforce use and compliance.

1.9 DOCUMENTS ON SITE

.1 Post Lockout Procedures on site in common location for viewing by workers.

.2 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers on site for full duration of Work.

.3 Upon request, make available to Departmental Representative or to authorized safety representative for inspection.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 WORK REQUIREMENTS

.1 Contractor shall ensure that the bridge is de-energized and cannot be operated while Work is being performed.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 National Building Code 2015 (NBC):

.1 NBC 2015, Division B, Part 8 Safety Measures at Construction and Demolition Sites.

.4 National Fire Code 2010 (NFC):

.1 NFC 2010, Division B, Part 5 Hazardous Processes and Operations, subsection 5.6.1.3 Fire Safety Plan.

.5 Province of Ontario

.1 Occupational Health and Safety Act, R.S.O. 1990, Chapter O.1 as amended, and regulations for Construction Projects, O. Reg. 213/91 as amended.

.2 O. Reg. 490/09, Designated Substances.

.3 Workplace Safety and Insurance Act, 1997.

.4 Reopening Ontario (A Flexible Response to COVID-19) Act, 2020, S.O. 2020, c. 17 as amended (https://www.ontario.ca/laws/statute/20r17).

.5 Municipal statutes and authorities.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.

.3 Measures and controls to be implemented to address identified safety hazards and risks.

.4 COVID-19 Workplace Safety Plan, developed using guidelines and regulations provided by the Government of Ontario.

.5 Contractor’s and Sub-contractors’ Safety Communications Plan.

.6 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations. Coordinate plan with existing Emergency Response requirements and procedures provided by Departmental Representative.

.3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 2 days after receipt of plan. Revise plan

as appropriate and resubmit plan to Departmental Representative within 2 days after receipt of comments from Departmental Representative.

.4 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.5 Submit names of personnel and alternates responsible for site safety and health.

.6 Submit records of Contractor's Health and Safety meetings when requested.

.7 Submit copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative, monthly.

.8 Submit copies of orders, reports or directions issued by health and safety inspectors of the authorities having jurisdiction.

.9 Submit copies of incident and accident reports.

.10 Submit WHMIS MSDS - Material Safety Data Sheets.

.11 Submit Workplace Safety and Insurance Board (WSIB) – Experience Rating Report.

.12 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.3 FILING OF NOTICE

.1 File Notice of Project with Provincial authorities prior to beginning of Work.

1.4 WORK PERMIT

.1 Obtain building and other permits related to the project prior to beginning of Work.

1.5 SAFETY ASSESSMENT

.1 Perform site specific safety hazard assessment related to project.

1.6 MEETINGS

.1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.7 REGULATORY REQUIREMENTS

.1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

.2 Comply with the Acts and regulations of the Province of Ontario.

.3 Comply with specified standards and regulations to ensure safe operations at site.

1.8 PROJECT/SITE CONDITIONS

.1 Work at site will involve contact with:

.1 Silica in concrete.

.2 Lead in paint. (Believed to have been removed from all painted surfaces of the bridge in previous painting contract).

.3 Guano on bridge surfaces.

.4 Rusted metals from structure.

.5 Work near water.

.6 Work near utilities.

.7 Arsenic (CCA) in preserved wood.

.8 Contact with moving equipment.

.9 Work on the roadway.

.10 Falling hazards.

.11 Animals and pests.

.12 Low temperatures.

.13 Ice.

.14 Heating equipment.

.15 Air quality/vapors inside enclosures.

.2 The Contractor shall comply with the Public Services and Procurement Canada (PSPC) lock out/tag out procedures for the equipment at the site.

1.9 GENERAL REQUIREMENTS

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements.

.3 Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety plan shall be submitted to the Departmental Representative in writing.

1.10 RESPONSIBILITY

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

.3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.11 COMPLIANCE REQUIREMENTS

.1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 and Ontario Regulations for Construction Projects, O. Reg. 213/91.

1.12 UNFORSEEN HAZARDS

.1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.

.2 Follow procedures in place for Employees Right to Refuse Work as specified in the Occupational Health and Safety Act for the Province of Ontario.

1.13 HEALTH AND SAFETY CO-ORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:

.1 Have site-related working experience.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.

.4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

.5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.14 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of the Province of Ontario, having jurisdiction, and in consultation with Departmental Representative.

.1 Contractor's Safety Policy

.2 Constructor's Name.

.3 Notice of Project.

.4 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable).

.5 Ministry of Labour Orders and reports.

.6 Occupational Health and safety Act and Regulations for Construction Projects for province of Ontario.

.7 Address and phone number of nearest Ministry of Labour office.

.8 Material Safety Data Sheets.

.9 Written Emergency Response Plan.

.10 Site Specific Safety Plan

.11 Valid certificate of first aider on duty.

.12 WSIB: In case of Injury at Work poster.

.13 Location of toilet and cleanup facilities.

1.15 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.16 BLASTING

.1 Blasting or other use of explosives is not permitted.

1.17 POWDER ACTUATED DEVICES

.1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

1.18 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

.2 Assign responsibility and obligation to Competent supervisor to stop or start Work when, at Competent Supervisor's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Guidelines and Guidance Documents (as amended)

.1 Canadian Council of Ministers of the Environment (CCME), 2011. Protocols Manual for Water Quality Sampling in Canada.

.2 Canadian Council of Ministers of the Environment (CCME), 1999 (and as Updated). Canadian Environmental Quality Guidelines, Water Quality Guidelines for the Protection of Aquatic Life.

.3 Public Works and Government Services Canada, The Environmentally Responsible Construction and Renovation Handbook – Second Edition (2000)

.2 Ontario Acts and Regulations

.1 Environmental Protection Act, R.S.O. 1990, c. E.19

.3 Federal Acts and Regulations

.1 Fisheries Act, R.S.C. 1985, c. F-14

.2 Canadian Environmental Protection Act, S.C. 1999, c.33

.3 Migratory Birds Convention Act, S.C. 1994, c.22

.4 Species at Risk Act, S.C. 2002, c.29

.5 Canadian Environmental Assessment Act, 2012

1.2 DEFINITIONS

.1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.

.2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer’s instructions, printed product literature and data sheets for all products used.

.2 Submit 2 copies of WHMIS Safety Data Sheets (SDS) in accordance with Section 01 35 29.06 - Health and Safety Requirements.

.3 Comply with all applicable Federal, Provincial and Municipal environmental protection laws and regulations. Make the appropriate submissions and obtain all environmental approvals that may be necessary to complete the work in the Contract.

.4 Address all topics at a level of detail commensurate with environmental issues and required construction tasks.

1.4 FIRES

.1 Fires and burning of rubbish on site is not permitted.

1.5 WORK ADJACENT TO WATERWAYS

.1 Obtain all regulatory approvals for any in-water works that are anticipated.

.2 Do not dump excavated fill, waste material or debris in waterways.

.3 Store heavy equipment a safe distance to any watercourse when not in use.

.4 Refueling of equipment to occur away from slopes and at least 30 m from any surface water.

.5 The use and discharge of chemicals and cleaning agents is prohibited within 30 m of aquatic habitats.

.6 Store all oils, lubricants, fuels and cleaning agents in secure areas on impermeable pads and away from aquatic habitats and waterbodies. Provide berms if necessary.

.7 Only the working end of machinery is to directly enter the water. Clean the working end of machinery and maintain free of fluid leaks. If oils are to be used, they are to be vegetable based oils.

.8 Take measures and provide a protection system or systems to ensure that no construction material or debris is allowed to fall into the waterway.

.9 Waterways to be free of excavated fill, waste material, and debris.

.10 Stabilize any waste materials removed from the work site, upland to prevent them from entering the watercourse.

.11 Discharge sediment laden or turbid waters generated from activities, into proper sediment containment system for settling and filtration.

.12 Dumping excavated fill, waste material, or debris in the watercourse is prohibited.

.13 Do not skid logs or construction materials across waterways.

.14 Do not blast under water.

1.6 POLLUTION CONTROL

.1 Control emissions from equipment in accordance with local authorities' emission requirements.

.2 Unnecessary idling is not permitted.

.3 Take whatever measures necessary to ensure that pollutants do not enter the watercourse

.4 Do not allow debris, residue of wet concrete or mortar in the aquatic environment.

.5 All lubricants, petroleum products and chemicals to be stored in secure impermeable area

.6 Remove all debris accidentally introduced into the environment as soon as possible.

.7 Prepare a Spills Response and Action Plan and implement immediately in the event of a spill of a deleterious substance (i.e. during construction or refuelling of equipment) or upon the detection of sediment release (i.e. debris from rehabilitation works).

.8 The Spills Response and Action Plan is to address how to react to and clean-up any hazardous spills that may occur and is to also identify equipment refuelling and maintenance areas. This plan may include, but is not limited to proper containment, clean-up and reporting protocols, in accordance with various federal and provincial requirements.

.9 Should a spill take place during the Works:

.1 Stop work, contain the spill of deleterious substance and/or sediment-laden release, debris and other waste materials and prevent their further migration into the environment including the waterway;

.2 Notify all applicable authorities including Environment Canada and the Departmental Representative and Ontario Department of the Environment;

.3 Promptly clean–up and appropriately dispose of the deleterious substances and/or the sediment-laden water, construction debris and other waste material in a location where it cannot enter/re-enter any watercourse;

.10 Ensure clean-up measures are suitably applied so as not to result in further degradation of the canal.

.11 Perform the operation and refueling and maintenance of equipment with the use of toxic materials offsite.

.1 Refuel and maintain machinery or equipment, and store materials at least 30 m away from the water.

.12 An adequate supply of clean-up materials is to be on site with a work crew that is fully trained to prevent and respond to accidental spills.

1.7 HAZARDOUS MATERIALS AND DESIGNATED SUBSTANCES

.1 Refer to Section 02 81 00 – Hazardous Materials for further information regarding the use of hazardous materials.

.2 Proper spill control equipment/items (spill kits, MSDSs, absorbents, containers, caution signs/tape, etc.) will be readily available in areas where large quantities of hazardous materials are to be stored.

.3 Although the bridge was blasted and recoated circa 2007 there still may be some remaining levels of lead in the paint. Handling, disposal and recycling requirements in accordance with provincial and federal regulations.

1.8 SITE RESTORATION

.1 Cover or stabilize all disturbed soils and grass as soon as possible upon completion of work, and maintain erosion and sedimentation control measures in place until slopes are stabilized, as approved by Departmental Representative.

.2 Restore the area following construction with a fast-growing, low maintenance, diverse native species adapted to the project area to enhance the local plant community.

.3 Following removal of all temporary works, a post-construction survey will be completed to ensure site re-instatement.

.4 Ensure that site re-instatement following construction/demolition is to the satisfaction of regulating authorities.

1.9 NOTIFICATION

.1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection Plan.

.2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.

.1 Take action only after receipt of written approval by Departmental Representative.

.3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.

.4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

.3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

.4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

.5 Maintain the site in a tidy condition, free from the accumulation of waste products, debris and litter.

.6 Do not deposit demolition or construction debris in the waterway; inert concrete/asphalt debris will be considered a deleterious substance.

.7 An emergency spill kit is to be kept on site in case of fluid leaks or spills from machinery.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 11 00 – Summary of Work.

.2 Section 01 35 29.06 – Health and Safety Requirements.

.3 Section 01 35 43 – Environmental Procedures.

.4 Section 01 55 26 – Traffic Control.

.5 Section 01 74 19 – Waste Management and Disposal.

1.2 REFERENCES TO REGULATORY REQUIREMENTS

.1 CSA S6-19, Canadian Highway Bridge Design Code.

.2 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.3 HAZARDOUS MATERIAL DISCOVERY

.1 Stop work immediately when material suspected as being hazardous is encountered during work. Notify Departmental Representative immediately.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 INSPECTION

.1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.

.3 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative will pay cost of examination and replacement.

1.2 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.3 PROCEDURES

.1 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.4 REJECTED WORK

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor’s work damaged by such removals or replacements promptly.

.3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.5 REPORTS

.1 Submit 4 copies of inspection and test reports to Departmental Representative.

.2 Provide copies to subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

.3 Provide test reports for all high-strength fasteners used in the work showing they meet the requirements for the grades and standard specified. For bolts, nuts, and washers supplied

from a manufacturer outside Canada or the United States of America, the above information shall be verified by testing at a Canadian laboratory.

1.6 TESTS

.1 Furnish test results as requested.

.2 Cost of tests beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

1.7 MILL TESTS

.1 Submit mill test certificates for all steel.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.1 Site barriers must be sufficient to protect the public and exclude them from the work area.

1.2 INSTALLATION AND REMOVAL

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 All temporary work required under this Contract shall be erected and removed within the scheduled closure duration.

1.3 TEMPORARY POWER AND LIGHT

.1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 30 amps.

.2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

.3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor based on General Conditions of Contract.

.4 In all areas of work ensure sufficient lighting is provided to complete and inspect the work.

.5 During night time work provide additional lighting in work areas to compensate for the lack of natural lighting.

.6 Provide for the use of the Departmental Representative additional work lights for inspection.

1.4 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction, governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on Site.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 35 43 – Environmental Protection.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CAN/CSA-Z321-96 (R2001), Signs and Symbols for the Occupational Environment.

.2 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions C, In Effect as of: May 14, 2004.

.3 Reopening Ontario (A Flexible Response to COVID-19) Act, 2020, S.O. 2020, c. 17 as amended (https://www.ontario.ca/laws/statute/20r17).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4 INSTALLATION AND REMOVAL

.1 Contractor shall only use areas outlined in the Contract Drawings for staging, storage, and completion of work.

.2 Indicate use of supplemental or other staging area.

.3 Provide construction facilities in order to execute work expeditiously.

.4 Remove from site all such work after use.

1.5 HOISTING

.1 Provide, operate and maintain hoists required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.

.2 Hoists to be operated by qualified operator.

1.6 SITE STORAGE/LOADING

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.7 CONSTRUCTION PARKING

.1 Parking will be permitted on site at locations shown in the Contract Drawings.

.2 Provide and maintain adequate access to project site.

1.8 SECURITY

.1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.9 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.10 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.11 CONSTRUCTION SIGNAGE

.1 Provide and erect project sign, within three weeks of signing Contract, in a location designated by Departmental Representative.

.2 Indicate on sign, name of Owner, Contractor and Consultant, of design style established by Departmental Representative.

.3 No other signs or advertisements, other than warning signs, are permitted on site.

.4 Direct requests for approval to erect Consultant/Contractor signboard to Departmental Representative. For consideration general appearance of Consultant/Contractor signboard must conform to project identification site sign. Wording in both official languages.

.5 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

.6 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.12 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide access and temporary relocated roads as necessary to maintain traffic.

.2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.

.3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs

.4 Protect travelling public from damage to person and property.

.5 Contractor’s traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

.7 Dust control: adequate to ensure safe operation at all times.

.8 Provide snow removal during period of Work.

1.13 CLEAN-UP

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Ministry of Transportation, Ontario (MTO)

.1 Ontario Traffic Manual, Book 7: Temporary Conditions – January 2014 (Including July 2016 Errata).

.2 PSPC Road Closure Protocol (attached in Appendix A).

1.2 PROTECTION OF PUBLIC TRAFFIC AND OF THE WORK ZONE

.1 Comply with requirements of Acts, Regulations and By-Laws in force, as well as the PSPC Road Closure Protocol, for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.

.2 The Contractor shall be responsible for the complete safety and protection of his workers and public and of the bridge structure, including all necessary provisions to prevent unauthorized vehicular or pedestrian access to the work zone.

.3 When working on travelled way:

.1 Place equipment in position to minimize interference and hazard to travelling public.

.2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.

.3 Do not leave equipment on travelled way outside of lane closure window.

.4 Close lanes of road only after receipt of written approval from Departmental Representative.

.1 Before re-routing traffic erect suitable signs and devices to Ontario Traffic Manual, Book 7: Temporary Conditions.

.5 Keep travelled way graded, free from pot holes and of sufficient width for required number of lanes of traffic.

.1 Provide 5 m wide minimum temporary roadway for traffic in one-way sections through Work and on detours.

.6 Institute work zone protection and ensure that traffic control measures are fully implemented and that all traffic across the LaSalle Causeway has cleared the work zone.

.7 Return the roadway to its pre-construction configuration outside of the lane closure window. Sidewalk to be safe and accessible to the public outside of the lane closure window.

.8 Provide and maintain road access and egress to property fronting along the LaSalle Causeway affected by the work zone, except where other means of road access exist that meet approval of Departmental Representative.

.9 A traffic control plan has been provided in the drawing package. The purpose of these drawings is to illustrate the general method of traffic control during construction. It is not a comprehensive traffic control plan or detailed staging drawings, nor a comprehensive

list of all the works. The Contractor shall provide a traffic control plan that details the specific traffic control layout(s), necessary for the completion of the works at least two weeks prior to closures, to the Departmental Representative. Assist the Departmental Representative to coordinate with affected stakeholders. Include the following in the traffic control plan:

.1 Monitoring and Repair (24 hour contact number if not acquired);

.2 Reference to Applicable OTM Book 7 Typical Layouts;

.3 Traffic control signs (regulatory, warning and temporary);

.4 Traffic control delineation;

.5 Traffic control vehicles and devices (TC-12, Crash Trucks, Temporary Lighting etc.);

.6 Contract-specific operational requirements;

.7 Night time requirements;

.8 Traffic staging and scheduling;

.9 Construction vehicle access/egress;

.10 Public access/egress for all existing entrances and side roads;

.11 Pedestrian safety; barriers and barricades;

.12 Emergency Vehicle access;

.13 Parking for Departmental Representative; and

.14 Any other traffic control measures.

1.3 INFORMATIONAL AND WARNING DEVICES

.1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.

.2 Supply and erect signs, delineators, barricades and miscellaneous warning devices to Ontario Traffic Manual, Book 7: Temporary Conditions.

.3 Place signs and other devices in locations recommended in Ontario Traffic Manual, Book 7: Temporary Conditions.

.4 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.

.5 Continually maintain traffic control devices in use:

.1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.

.2 Remove or cover signs which do not apply to conditions existing from day to day.

1.4 CONTROL OF PUBLIC TRAFFIC

.1 All work within stage 1 shall be conducted within closures as indicated; the bid price shall accommodate day/night work as required to complete the works within the time frame as indicated.

.2 Provide competent flag personnel or Portable Temporary Traffic Signals (PTTS) in accordance with, and properly equipped to Ontario Traffic Manual, Book 7: Temporary Conditions for situations as follows:

.1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.

.2 Where roadway, carrying two-way traffic, is restricted to one lane on the bridge.

.3 When labourers or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.

.4 Where temporary protection is required while other traffic control devices are being erected or taken down.

.5 For emergency protection when other traffic control devices are not readily available.

.6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

.7 At each end of restricted sections where pilot cars are required.

.8 Delays to public traffic due to contractor's operators: 15 minutes maximum.

.3 Where roadway, carrying two-way traffic, is restricted to one lane, for 24 hours each day, provide portable traffic signal system.

.1 Adjust, as necessary, and regularly maintain system during period of restriction.

.2 Ensure signal system meets requirements of Ontario Traffic Manual, Book 7: Temporary Conditions.

1.5 OPERATIONAL REQUIREMENTS

.1 The Contractor shall maintain existing conditions for traffic throughout period of contract except that, when required for construction under Contract and when measures have been taken as determined by the Contractor, as indicated, and approved by Departmental Representative to protect and control public traffic.

.2 Lane and closures of the bridge shall only occur within time windows outlined in the work schedule and shall not interfere with the work of any other contractors. Sidewalk shall remain open to pedestrians at all times.

.3 The Contractor shall schedule his operations in such a manner that the duration of activities which prevent emergency vehicle crossing of bridge are kept to an absolute minimum.

Part 2 Products

2.1 PORTABLE TEMPORARY TRAFFIC SIGNALS (PTTS)

.1 Portable Temporary Traffic Signals (PTTS) in accordance with requirements of Ontario Traffic Manual, Book 7: Temporary Conditions.

Part 3 Execution

3.1 TRAFFIC AND PEDESTRIAN CONTROL

.1 Carryout traffic and pedestrian control requirements in accordance with approved plans and drawings and all requirements of this specification.

.2 Set up and maintain a Variable Portable Message Sign prior to and during construction notifying the public of upcoming closures. Message to be displayed is subject to approval by the Departmental Representative.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-94, Stipulated Price Contract.

.2 Within text of each specifications section, reference may be made to reference standards.

.3 Conform to these reference standards, in whole or in part as specifically requested in specifications.

.4 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.

.5 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

.6 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.

.7 OPSS Ontario Provincial Standard Specifications and OPSD Ontario Provincial Standard Drawings quoted in these specifications are available online at http://www.raqsa.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage .

1.2 QUALITY

.1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.

.3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.

.5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.3 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.4 METRIC SIZED MATERIALS

.1 SI metric units of measurement are used extensively on the drawings and in the specifications for this project.

.2 The Contractor is required to provide metric products in the sizes called for in the Contract Documents except where a valid claim can be made that a particular product is not available on the Canadian market, or where imperial products are specified.

.3 Claims for exemptions from use of metric sized products shall be in writing and fully substantiated with supportive documentation. Promptly submit application to Departmental Representative for consideration and ruling. Non-metric sized products may not be used unless Contractor's application has been approved in writing by the Departmental Representative.

.4 Difficulties caused by the Contractor's lack of planning and effort to obtain modular metric sized products which are available on the Canadian market will not be considered sufficient reasons for claiming that they cannot be provided.

.5 Claims for additional costs due to provision of specified modular metric sized products will not be considered.

1.5 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer’s instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer s seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementitious products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

.9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.6 TRANSPORTATION

.1 Pay costs of transportation of products required in performance of Work.

1.7 MANUFACTURER S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer s instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Departmental Representative, in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.8 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.9 CO-ORDINATION

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.10 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.11 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise. Torque bolts in accordance with manufacturer's

instructions; structural bolts shall be installed as specified elsewhere in the Contract Documents.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.12 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.13 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.14 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and pedestrian and vehicular traffic.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 74 19 – Waste Management and Disposal.

1.2 PROJECT CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.

.3 Clear snow and ice from access to the site, including on the bridge, bank/pile snow in designated areas only or remove from site.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.5 Provide on-site containers for collection of waste materials and debris.

.6 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Waste Management and Disposal.

.7 Dispose of waste materials and debris off site.

.8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.9 Provide adequate ventilation during use of volatile or noxious substances.

.10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.11 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 FINAL CLEANING

.1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment.

.4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.

.5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.6 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.7 Remove dirt and other disfiguration from exterior surfaces.

.8 Sweep and wash clean paved areas.

.9 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.

.10 Remove snow and ice from access to bridge and off the bridge.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for recycling and reuse in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 CONSTRUCTION & DEMOLITION WASTE

.1 Contractor shall dispose of any construction waste in accordance with all applicable federal, provincial, and municipal regulations.

1.2 WASTE PROCESSING SITES

.1 Province of: Ontario.

.1 Ministry of Environment and Energy, 135 St. Clair Avenue West, Toronto, ON, M4V 1P5.

.2 Telephone: 800-565-4923 or 416-323-4321.

.3 Fax: 416-323-4682.

.2 Recycling Council of Ontario: 215 Spadina Avenue, #225, Toronto, ON, M5T 2C7.

.1 Telephone: 416-657-2797.

.2 Fax: 416-960-8053.

.3 Email: rco@rco.on.ca.

.4 Internet: http://www.rco.on.ca/.

1.3 AGENCY INFORMATION

.1 Government Chief Responsible for the Environment.

Ontario Ministry of Environment and Energy
135 St. Clair Avenue West
Toronto, Ontario
M4V 1P5

General Enquiries
(416) 323-4321
(800) 565-4923

Fax
(416) 323-4682

.2 Environment Canada

Environment Canada
Toronto, Ontario

General Enquiries
(416) 734-4494

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedures:

.1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

.1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.

.2 Request Departmental Representative inspection.

.2 Departmental Representative Inspection:

.1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.

.2 Contractor to correct Work as directed.

.3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:

.1 Work: completed and inspected for compliance with Contract Documents.

.2 Defects: corrected and deficiencies completed.

.3 Equipment and systems: tested, adjusted and fully operational.

.4 Certificates required by Utility companies: submitted.

.5 Operation of systems: demonstrated to Departmental Representative's personnel.

.6 Work: complete and ready for final inspection.

.4 Final Inspection:

.1 When completion tasks are done, request final inspection of Work by Departmental Representative and Contractor.

.2 When Work is incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.

.6 Commencement of Lien and Warranty Periods: date of Departmental Representative's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.

.7 Final Payment:

.1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.

.2 When Work deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.2 FINAL CLEANING

.1 Clean in accordance with Section 01 74 00 - Cleaning.

.1 Remove temporary protection.

.2 Remove dust, dirt and foreign matter from surfaces.

.3 Broom clean paved exterior surfaces, rake clean other exterior surfaces.

.4 Remove snow and ice from access to building and parking lots.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

.1 Pre-warranty Meeting:

.1 Convene meeting one week prior to contract completion with Departmental Representative and contractor's representative, in accordance with Section 01 31 19 - Project Meetings to:

.1 Verify Project requirements.

.2 Review warranty requirements and manufacturer's installation instructions.

.2 Departmental Representative to establish communication procedures for:

.1 Notifying construction warranty defects.

.2 Determine priorities for type of defects.

.3 Determine reasonable response time.

.3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.

.4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.2 AS -BUILT DOCUMENTS AND SAMPLES

.1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Change Orders and other modifications to Contract.

.5 Reviewed shop drawings, product data, and samples.

.6 Field test records.

.7 Inspection certificates.

.8 Manufacturer s certificates.

.2 Store record documents and samples in field office apart from documents used for construction.

.1 Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.

.1 Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition.

.1 Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by Departmental Representative.

.6 If project is completed without significant deviations from Contract drawings and specifications submit to Departmental Representative one set of drawings and specifications marked "AS-BUILT".

1.3 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

.1 Record information on set of black line opaque drawings, and in copy of Manufacturer's Project Manual.

.2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently with construction progress.

.1 Do not conceal Work until required information is recorded.

.4 Contract Drawings and shop drawings: mark each item to record actual construction, including:

.1 Field changes of dimension and detail.

.2 Changes made by change orders.

.3 Details not on original Contract Drawings.

.4 Referenced Standards to related shop drawings and modifications.

.5 Specifications: mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.6 Other Documents: maintain manufacturer's certifications, field test records, and inspection certifications, required by individual specifications sections.

.7 Provide digital photos, if requested, for site records.

1.4 MATERIALS AND FINISHES

.1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.

.1 Provide information for re-ordering custom manufactured products.

.2 Additional requirements: as specified in individual specifications sections.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and for review by Departmental Representative.

1.6 WARRANTIES AND BONDS

.1 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

.4 Except for items put into use with Departmental Representative's permission, leave date of beginning of time of warranty until the Date of Certificate of Substantial Performance is determined.

.5 Verify that documents are in proper form, contain full information, and are notarized.

.6 Co-execute submittals when required.

.7 Retain warranties and bonds until time specified for submittal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Section Includes:

.1 General requirements relating to commissioning of project's components to ensure that interim repairs are correctly and securely installed.

.2 The contractor is responsible for making adjustments in the strengthening system to allow operation and to ensure that the system does not shift or become dislodged or prevents the bridge from lifting throughout its range of motion.

.2 Acronyms:

.1 AFD - Alternate Forms of Delivery, service provider.

.2 BMM - Building Management Manual.

.3 Cx - Commissioning.

.4 EMCS - Energy Monitoring and Control Systems.

.5 O&M - Operation and Maintenance.

.6 PI - Product Information.

.7 PV - Performance Verification.

.8 TAB - Testing, Adjusting and Balancing.

1.2 GENERAL

.1 Cx is a planned program of tests, procedures and checks carried out systematically on systems and integrated systems of the finished Project. Cx is performed after systems and integrated systems are completely installed, functional and Contractor's Performance Verification responsibilities have been completed and approved.

.1 Verify installed equipment, systems and integrated systems operate in accordance with Contract Documents and design criteria and intent.

.2 Once the work has been completed by the Contractor and then reviewed and accepted by the Departmental Representative, the Contractor shall proceed with Cx.

.1 The Contractor shall notify the PSPC Bridge Operator at least 48 hours in advance of planned Cx.

.2 PSPC Bridge Operator shall be the only party to operate the bridge during Cx.

.3 Departmental Representative is required to be present during Cx testing. Contractor shall give Departmental Representative 48 hours of notice prior to Cx.

1.3 NON-CONFORMANCE TO PERFORMANCE VERIFICATION REQUIREMENTS

.1 Should equipment or system components malfunction during Cx, the Contractor shall correct deficiencies, re-verify equipment and components within the unfunctional system, including related systems as deemed required by Departmental Representative, to ensure effective performance.

.2 Costs for corrective work, additional tests, inspections, to determine acceptability and proper performance of such items to be borne by Contractor. Above costs to be in form of progress payment reductions or hold-back assessments.

1.4 CONFLICTS

.1 Report conflicts between requirements of this section and other sections to Departmental Representative before start-up and obtain clarification.

.2 Failure to report conflict and obtain clarification will result in application of most stringent requirement.

1.5 COMMISSIONING SCHEDULE

.1 Provide provisions for Cx as part of construction schedule in accordance with Section 01 32 16.19 - Construction Progress Schedule - Bar (GANTT) Chart.

.2 Provide adequate time for Cx activities prescribed in technical sections and commissioning sections including:

.1 Verification of reported results.

.2 Repairs, retesting, re-commissioning, re-verification.

1.6 PROCEDURES

.1 Verify that equipment and systems are complete, clean, and operating in normal and safe manner prior to conducting start-up, testing and Cx.

.2 Conduct start-up and testing in following distinct phases:

.1 Open bridge one quarter (1/4) of the way, and then close the bridge fully. Check for interferences or movement of new strengthening components.

.2 Open bridge one half (1/2) of the way, and then close the bridge fully. Check for interferences or movement of new strengthening components.

.3 Open bridge three quarters (3/4) of the way, and then close the bridge fully. Check for interferences or movement of new strengthening components.

.4 Open bridge completely, and then close the bridge fully. Check for interferences or movement of new strengthening components.

.3 Contractor shall correct any deficiencies noted during Cx. Once deficiencies are rectified, resume Cx at discretion of PSPC Bridge Operator.

1.7 AUTHORITIES HAVING JURISDICTION

.1 Where specified start-up, testing or commissioning procedures duplicate verification requirements of authority having jurisdiction, arrange for authority to witness procedures so as to avoid duplication of tests and to facilitate expedient acceptance of facility.

.2 Obtain certificates of approval, acceptance and compliance with rules and regulation of authority having jurisdiction.

.3 Provide copies to Departmental Representative within 5 days of test and with Cx report.

1.8 COMMISSIONING CONSTRAINTS

.1 Cx to mitigate disruption to traffic. If possible, Cx is to be performed at night.

1.9 COMPLETION OF COMMISSIONING

.1 Upon completion of Cx leave systems in normal operating mode.

.2 Work to be considered complete only after commissioning has been successfully completed and the bridge has been shown to be fully operational.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 DESCRIPTION OF WORK

.1 This section covers the requirements for the supply, fabrication and installation of all necessary components for the interim rehabilitation and strengthening of the existing concrete counterweight. The installation of these components is intended to prevent and/or retain potential concrete spalls from falling onto the roadway below.

.2 All components used for the interim repair shall be new and conform with applicable standards, as provided in this Section.

.3 The original design of the bridge was done in 1916 using Imperial units. The dimensions on the Contract drawings were soft-converted to Metric units. The Contractor to verify all dimensions shown on the Plans.

.4 The drawings for the original bridge shall be used as a guideline for the rehabilitation of the bridge together with the Contract Drawings and most importantly, the confirmation with field measurements. Copies of the drawings for the existing bridge are available upon request.

1.2 RELATED REQUIREMENTS

.1 Section 01 33 00 – Submittal Procedures.

.2 Section 01 61 00 – Common Product Requirements.

1.3 PRICE AND PAYMENT PROCEDURES

.1 The Work of this Section will not be measured for payment. It will be paid for under the Contract Lump Sum Price.

.1 After the award of tender as part of the breakdown of the Lump Sum Price, the following will be assigned pricing "Interim Repair Fabrication", and " Interim Repair Erection".

1.4 REFERENCE STANDARDS

.1 American Society for Testing and Materials (ASTM)

.1 ASTM A90/A90M-13 Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.

.2 ASTM A123/A123M-17 Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.

.3 ASTM A603-19 Standard Specification for Metallic-Coated Steel Structural Wire Rope.

.4 ASTM A1023/A1023M-19 Standard Specification for Stranded Carbon Steel Wire Ropes for General Purposes.

.5 ASTM F1145-05 Standard Specifications for Turnbuckles, Swaged, Welded, Forged.

.2 Canadian Standards Association (CSA)

.1 CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel.

.2 CAN/CSA-G164-18 Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 CAN/CSA-S6-14 Canadian Highway Bridge Design Code (CHBDC).

.4 CAN/CSA-S16-14 Limit States Design of Steel Structures.

.3 United States of America Federal Specifications

.1 FF-C-450F Clamps, Wire Rope.

.2 FF-T-276B Fittings for Rope, Cable and Chain.

.3 RR-W-410H Wire Rope and Strand.

.4 American Society of Safety Engineers (ASSE)

.1 ANSI/ASSE A10.37-16 Debris Net Systems Used During Construction and Demolition Operations.

.5 American Iron and Steel Institute (AISI) / Wire Rope Technical Board (WRTB)

.1 Wire Rope User Manual.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer s instructions, printed product literature and data sheets for all components and include product characteristics, performance criteria, physical size, finish and limitations.

.2 If applicable, submit WHMIS Safety Data Sheet (SDS) in accordance with Section 01 35 29.06 – Health and Safety Requirements.

.1 Submit 2 copies of WHMIS SDS.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Ontario, Canada.

.2 Indicate shop and erection details including shop fabricated items, specific product from manufactures (when applicable), and fabrication and installation of appurtenances.

.3 Submit description of methods, sequence of erection and type of equipment proposed for use in installation of repair components.

.4 As-Built Drawings:

.1 The Contractor shall complete As-Built drawings for the repair assembly. It is anticipated for the most part that the shop drawings will form the basis for the As-Built Drawings for the work marked with changes that have occurred during fabrication and installation.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer’s written instructions and Section 01 61 00 - Common Product Requirements.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer s name and address.

.1 Ensure Departmental Representative has delivery schedules 7 days minimum prior to shipping.

.3 Storage and Handling Requirements:

.1 Provide protective blocking for lifting, transportation and storing.

.1 Exercise care during fabrication, transportation and erection all repair components.

.2 Do not notch edges of members.

.3 Do not cause excessive stresses.

.2 Mark mass on members weighing more than 3 tonnes.

.3 Protect unpainted weathering steel, before erection, with waterproof covering.

.4 Ensure that no portion of steel comes into contact with ground.

.1 Support all material on wood blocking and keep all hardware components in containers protected from moisture.

.2 Replace defective or damaged materials with new.

1.7 QUALITY ASSURANCE

.1 Contractor to submit a quality control plan prior to installation.

.2 Preconstruction Testing:

.1 Provide suitable facilities and cooperate with Departmental Representative and inspection organization in carrying out inspection and tests required.

Part 2 Products

2.1 MATERIALS

.1 Structural steel (corner protection): to CSA G40.21-13, grade and types, 350W for rolled sections, HSS members to 350W Class C unless otherwise noted on Contract Drawings.

.2 Wire rope: ½” diameter 6x19, galvanized, right regular lay, extra improved plowed steel (EIPS), independent wire rope core (IWRC) – or Departmental Representative approved equivalent.

.3 Thimble End Treatment: ½” diameter, hot dip galvanized, Crosby® G-411 standard wire rope thimbles – or Departmental Representative approved equivalent.

.4 Turnbuckles: 7/8” diameter x 18” take-up length, hot dip galvanized, Crosby® HG-226 eye & eye turnbuckle – or Departmental Representative approved equivalent.

.5 U-Bolts: ½” diameter, galvanized, Crosby® G-450 “Red-U-Bolt” wire rope clips – or Departmental Representative approved equivalent.

.6 Construction Debris Netting: 10,000-pound weight rated ALCO Construction Covers (RB-10000) – or Departmental Representative approved equivalent.

.7 Miscellaneous (including HSS, eye bolts and all associated hardware): to CSA G40.20/G40.21 (where applicable), hot dip galvanized, and as noted on contract drawings – or Departmental Representative approved equivalent.

.8 Hot dip galvanizing: to CAN/CSA-G164, minimum zinc coating of 600 g/m2.

2.2 SOURCE QUALITY CONTROL

.1 Steel producer qualifications: certified in accordance with CSA G40.20/G40.21.

.2 Submit all source documents in accordance with Section 01 33 00 Submittal Procedures. All certifications to clearer define the source, manufacturer and all companies in the chain of supply.

.3 Provide suitable facilities and co-operate with inspection organization and Departmental Representative in carrying out inspection and tests required.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for installation in accordance with manufacturer’s written instructions.

.1 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

.1 Work near river or embankments, as well as work near and over traffic and pedestrians, in accordance with the Contractor’s Health and Safety Plan submitted to the Departmental Representative prior to commencing work.

.2 Restrict drifting during assembly to minimum required to bring parts into position without distorting, kinking or sharply bending metal of any unit.

.3 Prepare all components prior to installation for Departmental Representative's approval as per recommendations from manufacture and applicable standards.

.4 The contractor shall test fit each component and receive Departmental Representative's approval prior to installation of the complete containment system.

3.3 INSTALLATION

.1 Falsework shall be in accordance to CSA S269.1.

.2 Do fabrication and erection of components in accordance with applicable codes and standards.

.3 For detailing and fabrication, "typical" or "similar" does not necessarily mean "identical".

.4 Mark members in accordance with CSA G40.20/G40.21.

.1 Use of die stamping shall not be permitted.

.2 Place marking at locations hidden when viewed from exterior after erection when steel is to be left in unpainted condition.

.5 Match marking: shop mark.

.6 Field Assembly

.1 Installation of corner protection details are required prior to installation of any wire rope segment.

.2 Wire rope segments shall be cut to length based on field measurement and the first cut segment shall be test fit prior to cutting the remaining sections.

.3 Cut ends of wire rope segments shall be seized in accordance with the procedure provided by the manufacturer or Wire Rope User Manual.

.4 Assembly of all components as per manufacture requirements and applicable standards.

.5 Wire ropes shall be parallel and snug to the counterweight. The turnbuckles shall be used to remove slack from the wire ropes, however the take-up length of the turnbuckles shall not be exceeded.

.6 All installed components shall be secured as to not move, shift or fall from the intended installation position.

.7 Handling of Existing Material

.1 Perform all work with care so that any existing materials which are to remain in place or be reused, will not be damaged.

.2 Should the Contractor damage any existing materials which are to remain in place or to be reused, the damaged material shall be repaired or replaced in a manner satisfactory to the Departmental Representative at no cost to the owner.

.3 During removal, take all necessary actions to ensure that none of these removed materials are permitted to fall into the river, or onto roadways, pathways, sidewalks, staging areas, etc.

3.4 CLOSURE

.1 Work of the Contract shall be performed within the closure duration and per the PSPC Road Closure Protocol set forth elsewhere in the Contract Documents.

.2 The Contractor is responsible for the verification of all necessary measurements required to do the work. All field measurements required to perform fabrication and to record the base-line reference dimensions/alignment of bridge elements where removals are to take place shall be taken by the Contractor to verify existing conditions.

.3 The Contractor is responsible for correct fabrication and fit of all fabricated components and shall submit documentation of said verification to the Departmental Representative, prior to commencing installation.

.4 The Contractor shall demonstrate and submit for review a written plan methodology including an itemized step by step sequence of every task required to fully complete the project 14 days before the planned closure and demonstrate the availability of all necessary material, equipment and labor on site.

3.5 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

.3 Waste Management: separate waste materials for reuse, recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

APPENDIX A

ROAD CLOSURE PROTOCOL

Lasalle Causeway – Road Closure Protocol

Unplanned Closures

Definition: *Unplanned closures are bridge closures impacting pedestrians and/or traffic due to a malfunction, an accident, or any other unforeseen event that affects public safety.*

Responsibility: *PSPC Bridge Operator on duty*

Step 1: Safely assess situation within 24 hours

Step 2: Call 911, in case of an accident with injuries and/or when public safety is compromised

Step 3: In case of malfunction, use available resources to troubleshoot and resolve issues on site.

Step 4: If closure is expected to exceed 15 minutes call Kingston 24 h Communications Dispatch at 613-548-4001 x5156.

Step 5: Call NCSS

Step 6: Repeat Steps 4 and 5 when an update on the expected closure duration is available, or when bridge has reopened.

Lasalle Causeway – Road Closure Protocol

Short Term, Lower-Impact Closures

Definition: Short term is less than 5 days.

Lower impact are closures during the following periods:
Single lane closures (alternating traffic):
00:00 to 06:00, 09:30 to 15:00 and 18:00 to 24:00 on Monday to Friday
00:00 to 24:00 on weekends

Full closures (bridge closed to traffic but not pedestrians):
00:00 to 06:00, 7 days a week

Closures during other periods are considered high-impact closures

Responsibility: PSPC Project Manager or Project Engineer

In the calendar week prior to the closure:

Step 1: Obtain or prepare closure details and Traffic Management Plan

Step 2: For full closures investigate conflicts with MTO and Parks Canada

Step 3: Prepare and submit closure communication to COMS

Text of the closure communication to include:
- Brief description of the work
- Closure details (hours, type, pedestrians)
- Indicate if closure is tentative
- Advise public to follow Kingston web site and/or social media

By Thursday 15:00 the week prior to the closure:

Step 4: Notify and submit closure communication to Kingston by e-mail:

Mark Dickson:	mdickson@cityofkingston.ca
Craig Hollingsworth:	chollingsworth@cityofkingston.ca
Mark Dickson	mdickson@cityofkingston.ca
Danny Potts	dpotts@cityofkingston.ca
Marissa Mascaro	mmascaro@cityofkingston.ca
Ian Semple	isemple@cityofkingston.ca

Step 5: For full closures arrange for PVMS 48 hours in advance of the closure. Two (2) required, one at each end of the crossing.

During the closure:

Lasalle Causeway – Road Closure Protocol

Step 6: Provide confirmation to City of Kingston by 15:00 whether closure is continued the following night/day. If notice is not given bridge will have to remain open the upcoming night/day.

Long Term OR Short Term High-Impact Closures

Definition: *Long term is 5 days or more.*

High Impact are closures during peak periods or closure preventing the passage of pedestrians.

Responsibility: PSPC Project Manager or Project Engineer

At least 21 days prior to the closure:

Step 1: Obtain or prepare proposed closure details and Traffic Management Plan (TMP)

Step 2: Circulate closure details and TMP to Kingston by e-mail and obtain comments:

Mark Dickson:	mdickson@cityofkingston.ca
Craig Hollingsworth:	chollingsworth@cityofkingston.ca
Mark Dickson	mdickson@cityofkingston.ca
Danny Potts	dpotts@cityofkingston.ca
Marissa Mascaro	mmascaro@cityofkingston.ca
Ian Semple	isemple@cityofkingston.ca

Step 3: Obtain comments from MTO and Parks Canada

Step 4: Review comments and revise closure details and TMP as required.

Step 5: Prepare and submit closure communication to COMS

Text of the closure communication to include:

- Brief description of the work
- Closure details (hours, type, pedestrians)
- Indicate if closure is tentative
- Advise public to follow Kingston web site and/or social media

At least 8 days or the Thursday a full week prior to the closure, by 15:00, whichever is earlier:

Step 6: Notify and submit closure communication to Kingston by e-mail:

Mark Dickson:	mdickson@cityofkingston.ca
Craig Hollingsworth:	chollingsworth@cityofkingston.ca
Mark Dickson:	mdickson@cityofkingston.ca
Danny Potts:	dpotts@cityofkingston.ca
Marissa Mascaro:	mmascaro@cityofkingston.ca
Ian Semple:	isemple@cityofkingston.ca

Step 7: For full closures arrange for PVMS 48 hours in advance of the closure. Three (3) will be required, one at each end of the crossing and one on CR 15 at the Highway 401 exit.

During the closure:

Step 8: Provide confirmation to City of Kingston whether there are any changes by 15:00, including cancelled closures, reduced schedules, etc.

PSPC Contacts:

Sascha Schreiber, Chief Engineer: Sascha.Schreiber@tpsgc-pwgsc.gc.ca
Ranya El Sadawy, Senior Bridge Engineer: Ranya.ElSadawy@tpsgc-pwgsc.gc.ca
Bridge Operator on Duty: Tom.Vilneff@pwgsc-tpsgc.gc.ca

Effective: 07-28-2020
Per: Ranya El Sadawy